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Spiders (Aranei) of the Belyaka Spit, Chukotka: peculiarities of the fauna and biotopic distribution

Пауки (Aranei) косы Беляка, Чукотка: особенности фауны и биотопического распределения

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КЛЮЧЕВЫЕ СЛОВА: Российская Арктика, Чукотский полуостров, типичные тундры, хорология, биотопическое распределение.

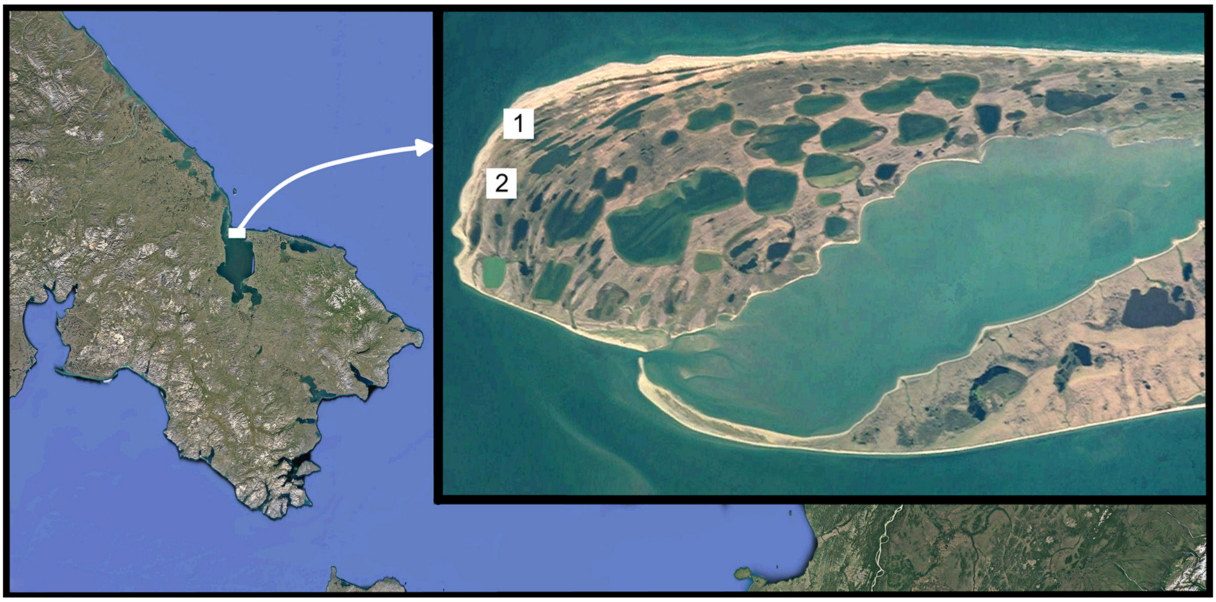
ABSTRACT. Eighteen spider species of four families have been collected by pitfall trapping from the Belyaka Spit in Kolyuchin Bay, northern coast of the Chukchi (= Chukotka) Peninsula: Linyphiidae (15 species), Lycosidae (1), Thomisidae (1) and Tetragnathidae (1). Twelve species are newly recorded from the spit. The composition of the spider fauna is typical for the northern part of the tundra zone and is characterized by predominance of purely Arctic spiders. Based on the composition of dominant species, two types of spider assemblages were revealed: 1) seaside-zone spider community in sandy-pebble habitats with halophytic vegetation, with *Erigone arctica sibirica* Kulczyński, 1908, *Halorates holmgreni* (Thorell, 1871) and *H. spetsbergensis* (Thorell, 1872) as predominants; 2) tundra and swamp vegetation spider community with *Pardosa algens* (Kulczyński, 1908) as a superdominant. The spider assemblages of wetlands are rich in species (15 species, 83% of the local araneofauna). The most typical for northern Asia hygrophilous Arctic species are presented here rather completely, including *Erigone psychrophila* Thorell, 1872, *Hilaira vexatrix* (O. Pickard-Cambridge, 1877), *Hybauchenidium aquilonare* (L. Koch, 1879), *Masikia indistincta* (Kulczyński, 1908), and *Silometopoides pampia* (Chamberlin, 1948), being the most abundant. The Belyaka Spit is the easternmost locality of the known distribution of *Semljicola barbiger* (L. Koch, 1879).

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РЕЗЮМЕ. На косе Беляка, расположенной в Колючинской губе на северном побережье Чукотского п-ова, почвенными ловушками собрано 18 видов пауков четырёх семейств: Linyphiidae (15 видов), Lycosidae (1), Tetragnathidae (1), Thomisidae (1); 12 видов указываются для косы впервые. Видовой состав типичен для северной части тундровой зоны, основу фауны составляют арктические виды. По набору доминантов выделено два типа группировок пауков: в приморских местообитаниях с галофитной растительностью доминируют *Erigone arctica sibirica* Kulczyński, 1908, *Halorates holmgreni* (Thorell, 1871) и *H. spetsbergensis* (Thorell, 1872); на участках косы с тундровой и болотной растительностью, расположенных вне зоны затопления, наиболее массовым видом является *Pardosa algens* (Kulczyński, 1908). Сырые местообитания косы отличает наиболее высокое видовое богатство пауков (15 видов, 83% всей фауны); здесь весьма полно представлены арктические пауки-пигмеи, входящие в число наиболее обычных обитателей подобных стаций в северной части азиатских тундр. Особенно многочисленны *Erigone psychrophila* Thorell, 1872, *Hilaira vexatrix* (O. Pickard-Cambridge, 1877), *Hybauchenidium aquilonare* (L. Koch, 1879), *Masikia indistincta* (Kulczyński, 1908) и *Silometopoides pampia* (Chamberlin, 1948). Для *Semljicola barbiger* (L. Koch, 1879) находка на косе является самой восточной из известных точек распространения вида.

Introduction

At present, the araneofauna of tundra of the Chukchi (= Chukotka) Peninsula has been studied quite



Map. Collection localities in the Belyaka Spit. 1 — biotopes No. 1 & 2; 2 — biotopes No. 3–5.
Карта. Месторасположение точек сборов на косе Беляка. 1 — биотопы № 1 и 2; 2 — биотопы № 3–5.

insufficiently. Available data for this region are sparse, fragmentary, and virtually lack ecological information (see Eskov [1985], Marusik *et al*. [1992], Marusik [1993]). In this regard, any data on the composition of the local faunas, the abundance and peculiarities of preferred habitat pattern in spiders of the Chukchi tundras are of a great interest.

In 2015, the freshly collected material on spiders was gathered from the Belyaka Spit, a narrow terrestrial stripe 21 km long, separating the Kolyuchin Bay and the Chukchi Sea. Based on the data of the Meteorological Station situated nearby on the Kolyuchin Island, the mean annual and July temperature is –9.5 °C and 6 °C, respectively, while the annual precipitation is approximately 300 mm, which is typical for the area located in the marine climate of the Arctic belt. Vegetation of this region is represented by the northern variant of hypoarctic tundra, after Yurtsev *et al*. [2010], which is rather corresponding to the typical tundra subzone, after Chernov [1978], Isachenko [1985], etc.

The Belyaka Spit consists of two terrestrial parts of different origin. Soils and vegetation of its southern part correspond to the continental part of the Kolyuchin Bay. The northern part of the spit (investigated area) is an alluvium, which has been formed due to the marine flow of sediments to the western direction [Kaplin *et al*., 1991]. The studied area is very interesting in terms of the climate severity and the young landscapes, which began to form relatively recently, 3500–4000 years ago [Ivanov, 1982]. The Belyaka Spit is in the "List of wetlands of the Northeast of Russia" due to the nesting here of the Eurasian shovel, *Eurynorhynchus pygmeus* (Linnaeus, 1757), the endemic of the Beringian Region.

The spider fauna of the Belyaka Spit has been only fragmentary studied. Based on the material collected by ornithologist Pavel S. Tomkovitch in 1986, seven species were recorded from that locality by Marusik *et al*. [1992]: *Pardosa algens* (Kulczyński, 1908), *Diplocephalus barbiger* (Roewer, 1955), *Erigone arctica sibirica* Kulczyński, 1908, *E. psychrophila* Thorell, 1872, *Hilaira vexatrix* (O. Pickard-Cambridge, 1877), *Gibothorax tchernovi* Eskov, 1989, and *Estrandia grandaeva* (Keyserling, 1886). All of them, except for two latter species, are represented in our recently collected material. The present paper is devoted to the analysis of composition of the local fauna and the habitat distribution of spiders in the Belyaka Spit area.

Material, methods and localities

The present paper is based on the material collected by ornithologists Aleksei Dondua and Natalia Vartanyan from the Belyaka Spit on June 14 to July 25, 2015. Pitfall traps (200 ml plastic cups, filled by water) were installed in five biotopes in lines of 10 traps, and were checked every 7–10 days. In total, 1820 trap-days were made, about 1400 specimens of spiders were collected. The weather conditions of the summer season were similar to average values, the snowmelt period occurred from the end of May to the middle of June.

Five biotopes in the two sites were studied, see Map and Table 1. Their short descriptions are given below, with mentioned biotopes ordered as due to the increase in their moisture state.

Site 1.

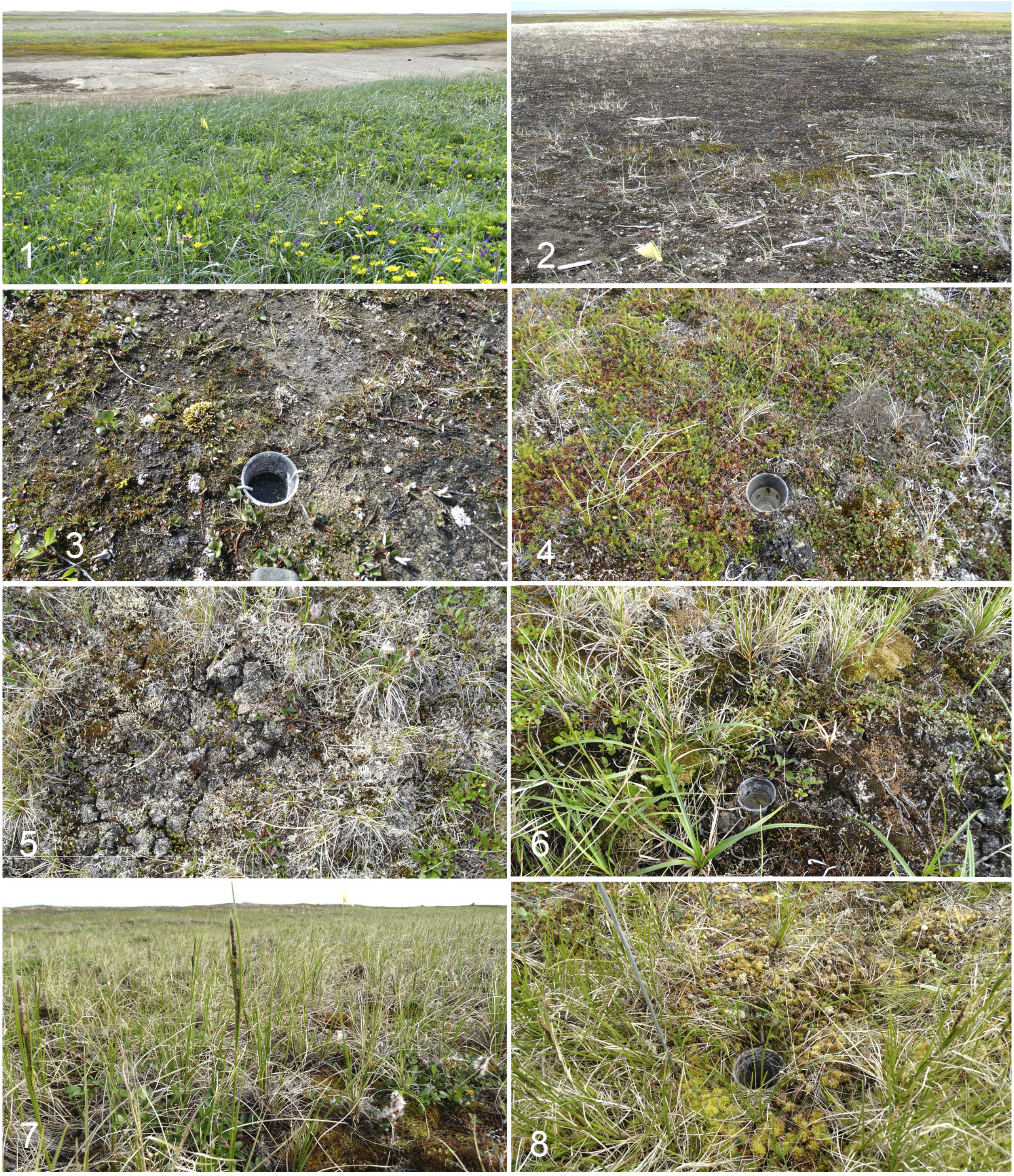
1. A grass meadow with *Honckenya oblongifolia*, *Lathyrus japonicus* subsp. *pubescens*, *Senecio pseudoarnica*, *Leymus villossimus*, etc., on sandy seashore 1.5–2 m in height (Fig. 1). The site (67°03′44.7″N, 174°36′27.9″W) is located at 100 m away from the water edge, in the zone of periodic flooding. The vege-

Table 1. Species composition, pattern of distribution and catchability of spiders (specimens/100 trapping-days) in different biotopes on the Belyaka Spit.
Таблица 1. Видовой состав, типы ареалов и уловистость пауков (экз./100 лов.-суток) в различных биотопах на косе Беляка.

	Pattern of distribution	Latitudinal fractions & latitudinal components of range	Biotopes					Total number of specimens
			Meadow on seashore [1]	Sandy-pebble beach [2]	Zonal shrubby-lichen-moss tundra [3]	Wet depression with grass-moss cover [4]	Bogged depression with sedge-moss-sphagnum cover [5]	
Fam. Linyphiidae								
Agyneta maritima	S-N	A(a-a)	0.5	–	–	–	–	2m
Arcterigone pilifrons	S-WN	A(a)	–	–	–	0.3	–	1f
Diplocephalus barbiger	S-N	A(a)	–	0.8	–	0.6	4.2	20f
Erigone arctica sibirica	S	A(a)	4.1	115.1	–	–	–	197m, 244f
E. psychrophila	H	A(a)	0.5	–	–	1.9	13.1	32m, 26f
Halorates holmgreni	H	A(a-m)	2.4	3.8	–	–	2.5	19m, 13f
H. spetsbergensis	H	A(a)	–	5.4	–	0.3	–	12m, 9f
Hilaira proletaria	S-WN	A(a)	–	–	–	–	1.9	5m, 2f
H. vexatrix	S-WN	A(a)	–	–	–	1.1	4.7	18m, 3f
Hybauchenidium aquilonare	S-WN	A(a)	–	–	0.3	1.9	3.6	6m, 14f
Masikia indistincta	S-N	A(a)	–	-	–	1.7	3.9	14m, 6f
Semljicola barbiger	F-S	A(a-a)	–	–	–	–	0.6	2m
Silometopoides pampia	S-WN	A(a)	–	–	–	2.8	2.2	6m, 12f
Walckenaeria clavicornis	S-N	A(a)	–	–	0.3	–	0.8	2m, 3f
Linyphiidae gen. sp.			–	–	–	0.3	–	1f
Fam. Lycosidae								
Pardosa algens	S-N	A(a)	1.4	–	23.1	75.8	90.3	775mf
Fam. Tetragnathidae								
Pachygnatha clercki	H	P	0.3	–	–	–	–	1j
Fam. Thomisidae								
Xysticus albidus	F-S	A(a)	–	–	6.4	0.6	–	22m, 3f
Total species:			6	4	4	11	11	

Explanation. Pattern of distribution: H — Holarctic, S-N — Siberian-Nearctic; S-WN — Siberian-West Nearctic; F-S — Fennoscandian-Siberian; S — Siberian. Latitudinal fractions: A — arctic; P — polyzonal. Latitudinal components of the range: a — arctic; a-a — arcto-alpine, a-m — arcto-montane.

Условные обозначения. Типы ареалов: H — голарктический, S-N — сибирско-неарктический; S-WN — сибирско-западнонеарктический; F-S — фенноскандинавско-сибирский; S — сибирский. Широтные фракции: A — арктическая; P — полизональная. Широтная составляющая ареала: a — арктический; a-a — аркто-альпийский; a-m — аркто-монтанный.



Photos 1–8. Photographs of the studied biotopes. 1 — meadow on seashore [1], general view; 2, 3 — sandy-pebble beach [2], general view and elements of plant cover; 4–5 — zonal shrubby-lichen-moss tundra [3], elements of plant cover; 6 — wet depression with grass-moss cover [4], elements of plant cover; 7–8 — bogged depression with sedge-moss-sphagnum cover [5], general view and elements of plant cover. The biotope number is given in square brackets.

Фото изученных биотопов. 1 — луг на береговом валу [1], общий вид; 2–3 — зарастающий песчано-галечниковый пляж [2], общий вид и элементы растительного покрова; 4–5 — зональная кустарничково-моховая тундра [3], элементы растительного покрова; 6 — сырая озёрная депрессия с травяно-моховым покровом [4], элементы растительного покрова; 7–8 — заболоченная депрессия с осоково-зеленомошно-сфагновым покровом [5], общий вид и элементы растительного покрова. В квадратных скобках даны номера биотопов.

tation cover is represented by mesohalophytic plant communities which are typical for the sandy seashores in northern Chukotka [Sergienko, 2008].

2. Sparse moss-lichen-willow communities on dry sandy-pebble beach (67°03′46.0″N, 174°36′08.5″W) with *Salix ovalifolia*, *S. nummularia* (Figs 2, 3). This site represents the subsequent overgrowing stage of the coastal beaches. It lies in the zone of occasional flooding, traced by the old driftwood.

Site 2.

Biotopes 3–5 are located at about 500 m west from the previous two habitats and, despite the relative proximity to the coast (200–300 m), are outside the zone of direct marine influence. The vegetation cover of this site is typical for the tundra landscapes of northern Chukotka.

3. Grass-shrubby-lichen-moss tundra (Figs 4–5) with *Carex* spp., *Salix* spp., *Empetrum subholarcticum* on a moderately moist, very gentle slope of a ridge of south-eastern exposure, 67°03′22.9″N, 174°36′40.7″W. This variant of vegetation is a zonal-type for the area.

4. Wet depression near a lake (Fig. 6), with willow-herbs cover (*Salix fuscescens*, *Eriophorum vaginatum*, *Carex* spp.), sphagnum and green mosses, 67°03′22.7″N, 174°36′36.7″W.

5. Bogged depression between two ridges with sedges, green mosses and sphagnum cover (Figs 7–8), 67°03′18.9″N, 174°36′47.7″W.

The chorological typification is given after Tanasevitch & Koponen [2007], Tanasevitch & Rybalov [2010, 2015], Tanasevitch & Nekhaeva [2016], Tanasevitch & Khruleva [2017], etc. All species are grouped into two latitudinal fractions based on their distribution, after Tanasevitch & Khruleva [2017]. Most species are attributed to the arctic fraction and only one represents the polyzonal group (Table 1).

Results and discussion

Unfortunately, only pitfall trapping method was used for catching spiders, and the traps were installed in a limited number of biotopes. Despite of that, 18 species of spiders were collected from the Belyaka Spit, 15 of which belonging to the family Linyphiidae. Other three families, Lycosidae, Tetragnathidae and Thomisidae, are represented by a single species each.

Habitat spreading

Most species of spiders were trapped from two, less often from three biotopes on the spit. Only five species were collected in a single biotope (Table 1). Only one species, *Halorates holmgreni* (Thorell, 1871), was collected in plots with different level of humidification; all the other species have sufficiently clear topical preferences. The majority of species (12) clearly prefer or are restricted by wet habitats. Spider assemblages of wetlands differ from populations of other biotopes by higher species richness (Table 1), and are quite similar to each other in the species composition and population structure: the Chekanovsky-Sörensen similarity indexes are 64 and 81%, respectively. *Pardosa algens* is a superdominant in wet habitats, its share there was 71–87% of all collected specimens; *Diplocephalus barbiger*, *Erigone psychrophila*, *Hilaira vexatrix*, *Hybauchenidium aquilonare* (L. Koch, 1879), *Masikia indistincta* (Kulczyński, 1908), *Silometopoides pampia* (Chamberlin, 1948) are also numerous there.

In total, 15 species were collected in wet habitats (83% of the local araneofauna). The total number of species in the zonal tundra was significantly lower: 4 species only. The abundance of three of them, i.e., *Pardosa algens*, *Hybauchenidium aquilonare* and *Walckenaeria clavicornis* (Emerton, 1882), in the zonal biotope was considerably lower than in wetlands. In contrast, the fourth species, *Xysticus albidus* Grese, 1909, had the highest abundance here.

The sandy seashore, the driest biotope among the surveyed ones, is characterized by the lowest pitfall-trapping catchability: only *Erigone arctica sibirica* and *Halorates holmgreni* were relatively abundant there. On the partially overgrown sandy-pebble beach, the abundance of *E. a. sibirica* sharply increases: 426 specimens, or 92% of the collected spiders in this biotope; both *H. holmgreni* and *H. spetsbergensis* (Thorell, 1872) being numerous there too.

Distributional and ecological composition

Spiders with the Siberian-American pattern of distribution (10 species) predominate in the araneofauna of the Belyaka Spit; other distributional groups are significantly poorer (Table 1). For *Semljicola barbiger* (L. Koch, 1879), the Belyaka Spit is the easternmost known locality. In the zonal aspect, the local fauna can be characterized as arctic; the optimum of the distribution of the majority of species lies in the tundra landscapes. Some of the species are unknown outside the tundra zone, e.g., *Arcterigone pilifrons* (L. Koch, 1879), *Halorates spetsbergensis*, *Diplocephalus barbiger*, *Hilaira vexatrix*, and *Silometopoides pampia*. Others, beside tundra zone, occur in subarctic and southern highlands [Eskov, 1985; Marusik, Eskov, 2009]. Only *Erigone arctica sibirica* and *Hybauchenidium aquilonare* show more extended, arcto-boreal pattern of distribution. However, to the south of border of the tundra zone (including forest-tundra), they are rather rare [Eskov, 1986; Esyunin, 1999; Marusik *et al*., 2002; Tanasevitch, Koponen, 2007; Marusik, Khruleva, 2011; Marusik, Koponen, 2015; etc.].

The list of collected species is typical for araneofaunas of the northern part of Eurasian tundras. It is very similar to that of such well-studied Arctic regional faunas as Wrangel Island [Khruleva, 2007], the lower reaches of the Lena River [Tanasevitch, Nekhaeva, 2016], the northern Yamal [Tanasevitch, Rybalov, 2015], the Yugorsky Peninsula [Tanasevitch, Khruleva, 2017]. Usually, the species-lists contain at least 12–14 common species.

Table 2. Topical spreading of spiders in different Arctic regions of Eurasia.
Таблица 2. Топическое распределение пауков в различных арктических регионах Евразии.

	Yugorsky Peninsula [t.t.][1]	Northern Yamal [border a.t–t.t.][2]	North-western Taymyr [a.t.][3]	Northern Yakutia [t.t.][4]	Wrangel Is., north-eastern part [p.d.][5]	Wrangel Is., southern part [a.t.][5]	Wrangel Is., central part [t.t][5]	Belyaka Spit [t.t.]
Agyneta maritima	–	–	–	MD	–	(D)	MPr	(Ps)
Arcterigone pilifrons	M	WM	–	W (MD)	–	–	(WD)	W
Diplocephalus barbiger	WM	WMPr	W(M)	WM (DPr)	PsM	Pr	–	W (Ps)
Erigone arctica sibirica	–	–	–	MPr (DPs)	–	(D)	D	Ps
E. psychrophila	(WD)	WPrs (M)	WMD	MPr	Pr WM	WPr (MD)	Pr	W (Ps)
Halorates holmgreni	DWPr (PsM)	WMPr	–	DPs(M)	–	(M)	W	PsW
H. spetsbergensis	W	M(Pr)	D(W)	–	MPs (W)	Pr (D)	–	Ps (W)
Hilaira proletaria	(W)	WPr	–	W	–	–	–	W
H. vexatrix	–	–	–	–	–	W (MD)	W	W
Hybauchenidium aquilonare	M (W)	(WM)	–	WMD	–	WPr M (D)	–	W(M)
Masikia indistincta	(W)	WMPr	–	WM (Pr)	–	–	–	W
Semljicola barbiger	MW (D)	WPr (M)	–	W	–	–	–	(W)
Silometopoides pampia	–	WPr	–	(MD)	–	WPr	W	W
Walckenaeria clavicornis	M (W, Ps)	WMPr	MD (W)	MD (Pr)	–	M (D)	(M)	(WM)
Pachygnatha clerki	W(Ps)	WMPr	–	WM(Ps)	–	–	–	(Ps)
Pardosa algens	–	–	–	–	–	W	Pr WMD	WM (Ps)
Xysticus albidus	MD	(M)	–	(MD)	–	–	WMD	M (W)

Explanation. Biotopes: W — wetlands; M — habitats with moderate moisture; D — dry habitats; Pr — pebble and sandy-pebble river floodplains; Ps — seaside pebble and sandy-pebble beaches; in brackets — single records. Used sources: [1]Tanasevitch & Khruleva [2017]; [2]Tanasevitch & Rybalov [2015]; [3]Khruleva & Berezin [2002]; [4]Tanasevitch & Nekhaeva [2016]; [5]Khruleva [1987, 1991; our unpublished data]. In square brackets it is shown the zonal position of the area: p.d. — polar desert, a.t. — arctic tundra subzone, t.t. — typical tundra subzone.

Условные обозначения. Местообитания: W — сырые; M — умеренно увлажнённые; D — сухие; Pr — галечниковые и песчано-галечниковые поймы рек; Ps — приморские галечниковые и песчано-галечниковые пляжи; в скобках указаны единичные находки вида. Использованные источники: [1]Tanasevitch & Khruleva [2017]; [2]Tanasevitch & Rybalov [2015]; [3]Khruleva & Berezin [2002]; [4]Tanasevitch & Nekhaeva [2016]; [5]Хрулёва [1987, 1991; наши неопубликованные данные]. В квадратных скобках указана зональная приуроченность района исследования: p.d. — полярные пустыни; a.t. — подзона арктических тундр; t.t. — подзона типичных тундр.

Data on the topical preferences of spiders in various Arctic tundra regions are shown in Table 2. In the northern part of the tundra zone, most of the species collected from the Belyaka Spit inhabit different types of biotopes. Almost all of them occur in sandy-pebble plots in floodplains of rivers or sea coasts in various tundra regions (Table 2). This fact presupposes that they have an obvious potential to colonize the sea spits too. Preference of such stations is especially characteristic for *Erigone arctica sibirica*, *Halorates holmgreni* and *H. spetsbergensis*, the species, which form the core of the spider assemblages in the Belyaka Spit beaches. In other regions of the Arctic these species occur both on the sea coasts and in the interior, mainland regions, where they show very high abundance in some places in river floodplains, less often on gravelly slopes with sparse vegetation, see Khruleva [1987, 1991], Khruleva & Berezin [2002], Tanasevitch & Rybalov [2015], Tanasevitch & Nekhaeva [2016], Tanasevitch & Khruleva [2017].

Most of the species collected from the Belyaka Spit in different Eurasian tundras prefer wet habitats, i.e., *Arcterigone pilifrons*, *Diplocephalus barbiger*, *Erigone psychrophila*, *Hilaira proletaria* (L. Koch, 1879), *H. vexatrix*, *Hybauchenidium aquilonare*, *Masikia indistincta*, *Silometopoides pampia*, *Pardosa algens*, *Pachygnatha clercki* Sundevall, 1823. In contrast, spiders inhabiting moderately moist or dry stations, except for *Agyneta maritima* (Emerton, 1919), are not represented in the treated material.

Surprisingly, the typical for the arctic tundra mesophilous spiders like *Alopecosa mutabilis* (Kulczyński, 1908), *Hilaira gertschi* Holm, 1960, *H. glacialis* (Thorell, 1871), *Oreoneta leviceps* (L. Koch, 1879), or *Semljicola arcticus* (Eskov, 1989), have not been collected on the Belyaka Spit.

The main peculiarities of the araneocomplexes in the Belyaka Spit

The peculiarities of spider habitat distribution in the Belyaka Spit reflect well their topical preferences as a whole. Species that occur on seashores in other regions of the Arctic, e.g., *Diplocephalus barbiger*, *Erigone arctica sibirica*, *Halorates holmgreni*, *H. spetsbergensis*, *Pachygnatha clercki*, etc., were collected in habitats with pronounced marine influence. The main part of the spider population of these biotopes (71–99% of all collected specimens) is represented by species, which prefer sand and pebble substrates. In contrary, in sward habitats outside the flooding zone, dominant species are those preferring wet communities. Their proportion in the population is from 77% in the site with moderate moistening, to 98–99% in wet depressions.

Probably, the similar pattern of spider distribution in the studied area does not depend of the degree of salinity of the surveyed biotopes. For example, *E. arctica sibirica* and *H. holmgreni* inhabiting seaside beaches occur in the interior regions of Wrangel Island [Khruleva, 1987] and Taimyr [Osipov, 2003]. On the contrary, hygrophilous species, e.g., *Masikia indistincta* and *Silometopoides pampia*, abundantly inhabit the saline maritime marches of Dolgyi Island [Marusik *et al*., 2016]. Obviously, the distribution of these species depends rather on the moistening regime and substrate: the presence of bare ground spots and the well-developed moss cover, the latter being the most important factor for spiders habitation [Tanasevitch *et al*., 2009].

As mentioned above, the main feature of the spider distributions on the Belyaka Spit is restriction of most species to moist plots. Judging by the available data, in the Eurasian sector of the Arctic, i.e., arctic tundra subzone and the northern part of the typical tundra subzone, the core of araneocomplexes in wetlands contains about 20 purely arctic linyphiid species, see Khruleva [1987, 1991]; Khruleva & Berezin [2002]; Tanasevitch & Rybalov [2015]; Tanasevitch & Khrisanova [2016]; Tanasevitch & Nekhaeva [2016]; Tanasevitch & Khruleva [2017]. Based on our unpublished data, the list of species which are particularly specific for wetlands in the eastern part of the Asiatic tundra is as follows: *Diplocephalus barbiger*, *Erigone psychrophila*, *Gibothorax tchernovi*, *Halorates holmgreni*, *Hilaira incondita* L. Koch, 1879, *H. nivalis* Holm, 1937, *H. proletaria*, *H.vexatrix*, *Hybauchenidium aquilonare*, *Masikia indistincta*, *Praestigia groenlandica* Holm, 1967, *Semljicola barbiger*, *S. simplex* (Kulczyński, 1908), and *Silometopoides pampia* from Linyphiidae, and *Pardosa septentrionalis* (Westring, 1861), *P. algens* and (or) *P. podhorskii* (Kulczyński, 1907) from Lycosidae. Notably, almost two-thirds of the mentioned above species have been collected from investigated area in two biotopes only, which shows their high activity in the region. Probably, the extremal local environments are rather favorable for these species and lie within their ecological optimum.

Thus, the following features are characteristic for the araneocomplexes of the Belyak Spit: 1) The core of spider population is composed by arctic species which can inhabit a wide range of biotopes, but clearly prefer wetlands or coastal habitats.

2) The composition of specific dominants clearly shows the presence of two different kinds of spider assemblages. The first one is typical for coastal halogen habitats, the second one is specific for sites with zonal-tundra and wetlands vegetation, located outside of area of direct sea influence.

3) The main peculiarity of the spider assemblages of wet habitats is their high diversity in the species composition. The most typical for northern Asia hygrophilous arctic species are presented here especially fully.

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